

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (currently amended): A method for removing mercury from a fluid stream, comprising the steps of: providing a composite material comprising a substrate and catalyst particles; and contacting a fluid stream with said composite, wherein said composite adsorbs and/or oxidizes said mercury,

wherein the catalyst particles are homogeneously dispersed in the substrate.

2. (canceled).

3. (original): The method of Claim 1, wherein said composite material is a sorbent.

4. (original): The method of Claim 3, wherein said sorbent is a gel.

5. (original): The method of Claim 4, wherein said gel is a xerogel.

6. (original): The method of Claim 1, further comprising the step of irradiating said composite material with radiation.

7. (original): The method of Claim 6, wherein said radiation has a wavelength of from about 160 to about 680 nm.

8. (original): The method of Claim 1, wherein said substrate is transparent to radiation.
9. (original): The method of Claim 8, wherein said substrate comprises porous silica.
10. (original): The method of Claim 9, wherein said catalyst comprises TiO_2 .
11. (original): The method of Claim 3, wherein said sorbent has a surface area (BET) of about 1 to about 1500 m^2/g .
12. (original): The method of Claim 1, wherein said catalyst is present in said composite material in an amount of from about 0.1 to about 100 wt%.
13. (original): The method of Claim 1, further comprising the step of regenerating the composite.
14. (original): The method of Claim 13, wherein said regeneration step comprises chemical or thermal regeneration.
15. (withdrawn): A composite, comprising a sorbent and mercuric oxide.
16. (withdrawn): The composite of Claim 15, further comprising a catalyst.
17. (withdrawn): The composite of Claim 16, wherein said catalyst is present in said composite in an amount of about 0.1 to about 100 wt%.

18. (withdrawn): The composite of Claim 16, wherein said catalyst is a photocatalyst.
19. (withdrawn): The composite of Claim 18, wherein said photocatalyst is TiO₂.
20. (withdrawn): The composite of Claim 15, wherein said sorbent is a gel.
21. (withdrawn): The composite of Claim 20, wherein said gel is a xerogel.
22. (withdrawn): The composite of Claim 15, wherein said sorbent is silica.
23. (withdrawn): The composite of Claim 15, wherein said sorbent has a surface area (BET) of from about 1 to about 1500 m²/g.
24. (withdrawn): The composite of Claim 15, wherein said mercuric oxide is present in said composite in an amount of from about 0.1 to about 100 wt% .